

# Fact Sheet



## *For Final Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act*

Permit Number: **R30-09900080-2009**

Application Received: **June 25, 2008**

Plant Identification Number: **09900080**

Permittee: **Big Sandy Peaker Plant, LLC.**

Mailing Address: **1044 North 115<sup>th</sup> Street, Suite 400, Omaha, NE 68154**

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Physical Location:	Kenova, Wayne County, West Virginia
UTM Coordinates:	360.9 km Easting • 4,245.0 km Northing • Zone 17
Directions:	Site is located between the Big Sandy River and State Route 52 and borders the Kenova Water Authority Treatment Plant on the south and Sunoco Chemical Plant on the North.

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### **Facility Description**

Big Sandy Peaker Plant, LLC.'s Big Sandy Peaker Plant operates 330 Megawatt (MW) natural gas-fired electric generating peaking station. The facility consists of (12) Pratt & Whitney FT8 Twin Pac jet turbine engines arranged so that there is one engine on each end of 6 gas turbine generators. SIC and NAICS Codes are 4911 and 221112, respectively.

## Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Regulated Pollutants	Potential Emissions	2007 Actual Emissions
Carbon Monoxide (CO)	157.18	9.307
Nitrogen Oxides (NO <sub>x</sub> )	247.60	79.731
Particulate Matter (PM <sub>2.5</sub> )	26.23	3.401
Particulate Matter (PM <sub>10</sub> )	26.23	3.401
Total Particulate Matter (TSP)	26.23	6.802
Sulfur Dioxide (SO <sub>2</sub> )	5.36	0.602
Volatile Organic Compounds (VOC)	18.59	0.333
<i>PM<sub>10</sub> is a component of TSP.</i>		
Hazardous Air Pollutants	Potential Emissions	2007 Actual Emissions
Formaldehyde	0.3001	0.146793
<i>Some of the above HAPs may be counted as PM or VOCs.</i>		

## Title V Program Applicability Basis

This facility has the potential to emit 157.18 tons per year of CO and 247.60 tons per year of NO<sub>x</sub>. Due to this facility's potential to emit over 100 tons per year of NO<sub>x</sub> and CO, Big Sandy Peaker Plant is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

## Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR6	Open burning prohibited.
	45CSR11	Standby plans for emergency episodes.
	45CSR13	Permits for Construction, Modification, Relocation and Operation of Stationary Sources.
	45CSR16	Standards of Performance for New Stationary Sources Pursuant to 40CFR60.
	45CSR26	NO <sub>x</sub> Budget Trading.
	45CSR30	Operating permit requirement.
	45CSR33	Acid Rain Provisions and Permits.
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	40 C.F.R. Part 60 Subpart GG	Standards of Performance for Stationary Gas Turbines
	40 C.F.R. Part 60 Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
	40 C.F.R. Part 61 Subpart M	Asbestos inspection and removal.
	40 C.F.R. Part 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)
	40 C.F.R. Part 64	Compliance Assurance Monitoring

	40 C.F.R. Part 72	Permits Regulations.
	40 C.F.R. Part 73	Sulfur Dioxide Allowance System Permits Regulation.
	40 C.F.R. Part 74	Sulfur Dioxide Opt-ins.
	40 C.F.R. Part 75	Continuous Emissions Monitoring.
	40 C.F.R. Part 76	Nitrogen Oxides Reduction Program.
	40 C.F.R. Part 77	Excess Emissions.
	40 C.F.R. Part 78	Appeals Procedure for Acid Rain Program.
	40 C.F.R. Part 82 Subpart F	Ozone depleting substances.
State Only:	45CSR4	No objectionable odors.
	45CSR39	Control of Annual Nitrogen Oxide Emissions to Mitigate Interstate Transport of Fine Particulate Matter and Nitrogen Oxide
	45CSR40	Control of Ozone Season Nitrogen Oxide Emissions to Mitigate Interstate Transport of Ozone and Nitrogen Oxide
	45CSR41	Control of Annual Sulfur Dioxide Emissions to Mitigate Interstate Transport of Fine Particulate Matter and Sulfur Dioxide

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the draft Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR15, 45CSR34 and 45CSR30.

### Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit ( <i>if any</i> )
R13-2383B	January 9, 2007	
Supersedes R13-2383A		
Installation of a 1,135 Bhp black-start generator.		

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table B," which may be downloaded from DAQ's website.

### Determinations and Justifications

There were no additional changes to the February 5, 2003 Title V Permit and Fact Sheet since R30-09900080-2003 (MM01) was issued.

The following updates were made in the renewal.

1. Added Section 1.2, Active R13, R14, and R19 Permits and Table.

2. Updated the facility information and regulatory language for Sections 3.1.1 and 3.1.2, 45CSR§§6-3.1 and 3.2.
3. A determination was made that 45CSR10 does not apply to engines and compressors. The Big Sandy facility does not refine or process gas streams, therefore, it is not subject to 45CSR§10-5. Also, since the Big Sandy facility is not a manufacturing process, it is not subject to 45CSR§10-4. Therefore, the former Section 4.1.14 in previous Title V permits was removed from the renewal Title V Permit.
4. Inserted a CAM Plan in Section 4.0.

#### 40 CFR 64 - Compliance Assurance Monitoring (CAM)

The twelve (12) Pratt & Whitney natural gas turbines at the Big Sandy Peaker Plant have pre-controlled potential emissions that exceed major source thresholds for carbon monoxide (CO) and each turbine is equipped with an oxidation catalyst bed. Since one control device is common to each PSEU, one monitoring plan was submitted in accordance with 40 C.F.R. § 64.4 (f). The submitted plan meets the requirements of the CAM rule for the Pratt & Whitney natural gas turbines controlling CO from the oxidation catalyst bed.

Monitoring per the CAM Plan for carbon monoxide (CO) emissions will be as follows:

		Indicator No. 1
I.	Indicator	Calculated Daily Average Combustion Turbine Exhaust Gas Temperature (EGT)
	Monitoring Approach	Monitor Combustion Turbine Exhaust Gas Temperature (EGT) via nine thermocouples (Section 4.2.4.) before gases enter the power turbine inlet. The power turbine exhaust gas is the inlet to the oxidation catalyst bed.
II.	Indicator Range or Designated Condition	Exhaust gas temperature from the power turbine that are above 800 degree F ensure the catalyst is operating as designed. (Section 4.2.5.)
III.	Performance Criteria	Thermocouples used in the monitoring system are accurate to within $\pm 2$ °F per manufacturer's information. (Section 4.2.4.)
	A. Data Representativeness	
	B. Verification of Operational Status	Not Applicable; Temperature thermocouples are unmodified original equipment.
	C. QA/QC Practices and Criteria	Anomalous combustion turbine EGT readings that are outside the known temperature parameters of 800 to 1369 °F for the current combustion turbine operation mode will be investigated. Those readings found to be accurate (i.e., not in error) will be considered valid and included in the daily average. Thermocouples will be calibrated according to manufacturer's recommendations. (Section 4.2.4.)
	D. Monitoring Frequency	Continuous during normal turbine operation except for periods of start-up, shutdown, and malfunction. (Section 4.2.5.)
	Data Collection Procedures	Temperature data will be recorded once each clock hour at half-past the hour (to avoid most dispatched start-ups occurring at the beginning of the hour). If, at the time of recordation, the combustion turbine is not operating normally (as defined above), the temperature for that hour will be deemed invalid and omitted from the calendar daily average calculation. (Sections 4.2.5 and 4.4.3.)
	Data averaging periods	Calendar day average of up to 24 valid hourly data recordation. A temperature excursion will be defined as a daily average combustion turbine EGT below 800 degrees F or exceeds 1369 °F. `Daily average temperature will be defined as the average of all valid hourly temperature recordation in a calendar day. See discussion in Monitoring Frequency and Data Collection Procedures for description of valid data. (Section 4.2.5)

The temperature is measured by a thermocouple at each of the combustion turbine exhaust. The combustion turbine exhaust is the inlet gas for the power turbine. Gas from the power turbine is the inlet gas to the CO oxidation catalyst bed.

Under normal operating conditions the exhaust gas temperature at the power turbine inlet is between 800°F at 50% load (minimum) and 1369°F at base load (maximum). The information submitted by the permittee shows that at 50% load and base load the temperature in the catalyst bed is between ~640°F and 900°F, well within the catalyst manufacturers recommended operating range of 500°F to 1200°F.

Operational experience at the site shows an Exhaust Gas Temperature (EGT) of 890°F at 14°F ambient temperature. The information submitted by the permittee shows that at 14°F ambient the catalyst bed temperatures at all loadings are within the manufacturer's specification for CO conversion. The permittee is asking for a lower limit of 800°F to cover ambient temperatures below 14°F.

There is little concern for catalyst breakthrough, fouling, pre-mature aging, and degradation occurring since the Big Sandy Peaker Plant's turbines combust clean natural gas and the catalysts are operated within the required temperature range of operation and life expectancy. Big Sandy has plans in place to test a portion of the catalyst near the end of the manufacturer's suggested life expectancy to gauge the remaining service life. Catalyst replacement will occur when the facility deems necessary.

No catalyst cleaning regiment is proposed by the facility at this time because of the low concentration and small size of particulate matter in the clean natural gas stream.

The twelve (12) Pratt & Whitney natural gas turbines at the Big Sandy Peaker Plant are not subject to a CAM Plan for nitrogen oxides (NO<sub>x</sub>) since the initial Title V permit addresses emission limitations and standards and has a continuous compliance determination method (Section 4.1.5, 4.1.8, 4.1.10, 4.2.2 and 4.3.1).

#### 40 C.F.R. Part 60 Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Big Sandy Peaker's Cummins Model QSK23-G3 NR1 Black Start Generator (G1) shall comply with 40 C.F.R. Part 60 Subpart IIII. The unit was installed according to manufacturer's specifications and a non-resettable hour meter was installed prior to startup of the engine per 40 C.F.R. § 60.4209 (a) to monitor run time. G1 is rated at 1,135 HP and it combusts No. 2 fuel oil. Applicable emissions limitations are found in Table 1 of 40 C.F.R. Part 60 Subpart IIII as specified in 40 C.F.R. § 60.4205 (a). According to 40 C.F.R. § 60.4211 (b) (3), performance testing is not required as long as records are kept of engine manufacturer data indicating compliance with the standards, see Section 4.4.4.

G1 is limited to 100 hours or less per year for the purpose of maintenance checking and readiness testing per 40 C.F.R. § 60.4211 (e), see Section 4.1.18. Since G1 consumes diesel fuel, the unit must use diesel fuel that meets the requirements of 40 C.F.R. § 80.510 (a) before October 1, 2010 per 40 C.F.R. § 60.4207 (a), see Section 4.1.19. Beginning October 1, 2010 the unit must use diesel fuel that meets the requirements of 40 C.F.R. § 80.510 (b) per 40 C.F.R. § 60.4207 (b), see Section 4.1.20. G1 has a displacement of less than 30 liters per cylinder.

Comparing the applicable emissions limitations from Table 1 of 40 C.F.R. Part 60 Subpart IIII with the emission limits in Section 4.1.16 of the Title V Permit (A.11. of R13-2383B) shows:

Pollutant	Table 1	Horsepower			Section 4.1.16
	g/hp-hr	HP-hr	Lb/g	LB/hr <sup>1</sup>	LB/hr
HC/VOC	1	1135	0.0022046	2.50	0.98
NO <sub>x</sub>	6.9	1135	0.0022046	17.26 <sup>2</sup>	19.27 <sup>2</sup>
CO	8.5	1135	0.0022046	21.27	3.23
PM	0.4	1135	0.0022046	1.00	0.40

<sup>1</sup> Calculation for LB/hr = g/hp-hr \* HP-hr \* LB/g

The limits from Section 4.1.16 of the Title V Permit/R13-2383B are more stringent than Table 1 of 40 C.F.R. Part 60 Subpart IIII, except for nitrogen oxide (NO<sub>x</sub>)<sup>2</sup>. Section 4.1.17 was added to the permit to incorporate a table of the maximum hourly emissions calculations based on Table 1 of 40 C.F.R. Part 60 Subpart IIII. Therefore, compliance for NO<sub>x</sub> in Section 4.1.16 will be shown by the more stringent requirement in Section 4.1.17.

#### **40 C.F.R. Part 63 Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE).**

40 C.F.R. Part 63 Subpart ZZZZ will apply to the facility because of the Cummins Black Start Generator (G1). The Generator (G1) is an affected source that is a new stationary RICE, per 40 C.F.R. § 63.6590 (a) (2) (iii). Since the affected source is considered a new stationary RICE located at an area source of HAPs, per 40 C.F.R. § 63.6590 (c), the emission Unit G1 must meet the requirements of 40 C.F.R. Part 63 Subpart ZZZZ by meeting the requirements of 40 C.F.R. Part 60 Subpart IIII. No further requirements apply for such engines under 40 C.F.R. Part 63 Subpart ZZZZ.

G1 does not have any requirements from 40 C.F.R. Part 63 Subpart ZZZZ in the Title V Permit.

#### **CAIR – Clean Air Interstate Rule**

The provisions of 45CSR39, 45CSR40, and 45CSR41 are tied to the federal CAIR program, which was vacated on July 11, 2008. This vacatur remanded CAIR back to EPA to re-write. It is supposed that the EPA would ask for a rehearing on the matter or appeal the ruling to the Supreme Court. To this date, no further action has occurred to reinstate the CAIR rules and it is not likely to happen given the court finding to vacate the rule was unanimous. Given this, the WVDEP Division of Air Quality (DAQ) is placing these rules on hold and thus leaving them out of this Title V permit. Although considered “on hold,” these rules are listed in the State-only Enforceable section of this fact sheet. The DAQ will take the necessary steps to reopen this permit in the event this vacatur is reversed.

At the time this permit entered the “Draft/Proposed Comment” period, the Clean Air Interstate Rule (CAIR) was waiting for a court mandate to the vacatur or an EPA appeal to the vacatur, as discussed in the above paragraph. Since the vacatur of July 11, 2008 was never mandated, CAIR essentially remained in effect. On December 23, 2008 the U.S. Court of Appeals for the D.C. Circuit remanded CAIR to EPA without vacatur of CAIR “so that EPA may remedy CAIR’s flaws in accordance with” the court’s July 2008 opinion vacating CAIR. In light of this latest development regarding CAIR, The provisions of 45CSR39, 45CSR40, and 45CSR41 have been added to the Section 3.1 requirements of the permit and the CAIR Permit Application has been added to the Appendix.

#### **Non-Applicability Determinations**

The following requirements have been determined not to be applicable to the subject facility due to the following:

<b>45CSR2</b>	To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers. According to R13-2383B the natural gas turbines are subject to 45CSR2. However, the turbines are not indirect heat exchangers and by definition are not fuel burning units. The turbines use the combustion gases to turn the turbine blades. Therefore, 45CSR2 is not listed as an applicable requirement for the turbines in the Title V permit.
<b>40 C.F.R. Part 60 Subpart KKK</b>	Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plant. The Big Sandy Peaker Plant is not engaged in the extraction or fractionation of natural gas liquids from field gas, the fractionation of mixed natural gas liquids to natural gas products, or both.
<b>40 C.F.R. Part 60 Subpart KKKK</b>	Standards of Performance for Stationary Combustion Turbines. Big Sandy Peaker Plant's turbines were installed in 2000. The Big Sandy Peaker Plant is not subject to 40 C.F.R. Part 60 Subpart KKKK, which is for turbines that commenced construction, modification or reconstruction after February 18, 2005.
<b>40 C.F.R. Part 63 Subpart HH</b>	National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities. The Big Sandy Peaker Plant is not subject to Subpart HH since The Big Sandy Peaker Plant is not a natural gas production facility.
<b>40 C.F.R. Part 63 Subpart HHH</b>	National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities. The Big Sandy Peaker Plant is not subject to Subpart HHH since the station does not have a dehydration facility as well as the station is not a major source of HAPs.
<b>40 C.F.R. Part 63 Subpart YYYY</b>	National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Turbines. The Big Sandy Peaker Plant is not subject to Subpart YYYY since it is not a major source of HAPs.

### Request for Variances or Alternatives

None

### Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

### Comment Period

Beginning Date: October 24, 2008  
Ending Date: November 24, 2008

All written comments should be addressed to the following individual and office:

Wayne Green  
Title V Permit Writer  
West Virginia Department of Environmental Protection  
Division of Air Quality  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304

## **Procedure for Requesting Public Hearing**

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

## **Point of Contact**

Wayne Green  
West Virginia Department of Environmental Protection  
Division of Air Quality  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304  
Phone: 304/926-0499 ext. 1258 • Fax: 304/926-0478

## **Response to Comments (Statement of Basis)**

The following revisions were made per Big Sandy Peaker Plant, LLC comments:

### **1. Big Sandy Peaker Plant's comment Number 1:**

#### **Section 3.7.2 and Fact Sheet (Page 6)**

The table of non-applicable regulations states that 40 C.F.R. Part 63 Subpart ZZZZ is not applicable since Big Sandy is not a major source of HAPs. However, Subpart ZZZZ is also applicable to minor/area sources.

#### **DAQ Response Number 1:**

Removed 40 C.F.R. Part 63 Subpart ZZZZ from the permit shield table in Section 3.7.2 and Fact Sheet since the Big Sandy is minor/area source of National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE).

40 C.F.R. Part 63 Subpart ZZZZ will apply to the facility because of the Cummins Black Start Generator (G1). The 1,135 HP, No. 2 Fuel Oil-Fired Cummins Black Start Generator (G1) is an affected source per 40 C.F.R. § 63.6590 (a) (2) (iii). Per 40 C.F.R. § 63.6590 (c), the affected source is considered a new stationary RICE located at an area source of HAPs. By meeting the requirements of 40 C.F.R. Part 60 Subpart IIII, G1 meets the requirements of 40 C.F.R. Part 63 Subpart ZZZZ.

### **2. Big Sandy Peaker Plant's comment Number 2:**

#### **Section 4.1.13**

There are two paragraphs "a"s in this condition.

#### **DAQ Response Number 2:**

The second paragraph was changed to "b" followed by other lettering changes.



**3. Big Sandy Peaker Plant's comment Number 3:**

**Section 4.2.4.**

In the last sentence the thermocouple accuracy is stated as “*within plus or minus two ( $\pm 2$ ) percent in degrees Fahrenheit,,,*” It should be just degrees Fahrenheit. Please delete “percent in”.

**DAQ Response Number 3:**

The second sentence of Section 4.2.4 was revised from “*The thermocouples used in the monitoring system are to be accurate within plus or minus two ( $\pm 2$ ) percent in degrees Fahrenheit...*” to “*The thermocouples used in the monitoring system are to be accurate within plus or minus two ( $\pm 2$ ) degrees Fahrenheit...*”

**4. Big Sandy Peaker Plant's comment Number 4:**

**Fact Sheet Page 1 - Facility Description**

Please revise the 2<sup>nd</sup> sentence to read “*The facility consists of (12) Pratt & Whitney FT8 Twin Pac jet turbine engines arranged so that there is one engine on each end of 6 gas turbine generators.*”

**DAQ Response Number 4:**

Revised the 2<sup>nd</sup> sentence from “*The facility consists of (12) jet turbine engines arranged so that there is one engine on each end of 6 Pratt & Whitney FT8 Twin Pac Natural Gas Turbine engines*” to “*The facility consists of (12) Pratt & Whitney FT8 Twin Pac jet turbine engines arranged so that there is one engine on each end of 6 gas turbine generators.*”

**5. Big Sandy Peaker Plant's comment Number 5:**

**Fact Sheet Page 2 - Legal and Factual Basis for Permit Conditions**

Please add the following regulations to the list of applicable rules:

- |                                |   |
|--------------------------------|---|
| 40 C.F.R. Part 60 Subpart IIII | Standards of Performance for Stationary Compression Ignition Internal Combustion Engines                                  |
| 40 C.F.R. Part 63 Subpart ZZZZ | National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) |

**DAQ Response Number 5:**

40 C.F.R. Part 60 Subpart IIII and 40 C.F.R. Part 63 Subpart ZZZZ were added to the Legal and Factual Basis for Permit Conditions as requested. Also, additional information regarding these subparts was incorporated in the Determinations and Justifications section of the Fact Sheet.

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Following are EPA's comments with DAQ's discussion and response to EPA Comments

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**1. EPA's comment Number 1**

Condition 4.1.6: This condition states the following: "An in-stack integrated oxidation catalyst shall be maintained and operated for the control of CO emissions from each natural-gas fired turbine. At such times that are necessary to maintain the performance of the oxidation catalyst, the catalyst shall be replaced." I do not think this permit condition is practically enforceable.

I suggest that WVDEP include a time period for testing the catalyst. For example: "At a minimum of once a permit term, an analysis of the catalyst activity should be completed following the manufacturer's recommended procedures. If problems are found during the catalyst activity test, the permittee must replace the catalyst bed or take other corrective action consistent with the manufacturer's recommendations." I suggest that the analysis be completed within 18 months of the expiration of the Title V permit, so the data can be used in the following permit renewal.

**Discussion on EPA's comment Number 1:**

All twelve (12) of the Pratt & Whitney FT8 Twin Pac Natural Gas Turbines have similar run times and are identical in design, operation, and fuel. It is reasonable to believe the catalysts degrade at similar rates. Thus, examining the catalyst from one of the turbines per permit term would be representative of the other catalysts. To maintain its status as a peaking facility under 40 C.F.R. Part 72, run times must average 876 hours per year or less per turbine. The Big Sandy Peaker Plant has been operating approximately five years. The facility operates less than 10% of the time. Catalyst life expectancy in terms of years is difficult to measure due to varying capacity factors (runtimes).

**DAQ Response Number 1:**

Section 4.2.6 is a new monitoring requirement that was added in response to EPA comment #1:

- 4.2.6. At a minimum of once a permit term, to determine compliance with Section 4.1.6, the permittee shall analyze the catalyst activity for one of the natural-gas fired turbines. The analysis should be completed following the manufacturer's recommended procedures. If problems are found during the catalyst activity test, the permittee must perform testing on the remaining eleven (11) catalyst beds and replace the catalyst beds that need to be replaced or take other corrective action consistent with the manufacturer's recommendations. The permittee shall test for catalyst activity on a different turbine each permit term. The analysis shall be completed within 18 months prior to this permits' expiration date. [45CSR§30-5.1.c., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06]

**2. EPA's comment Number 2**

General Comment: In your fact sheet you state the following: "Big Sandy has plans in place to test a portion of the catalyst near the end of the manufacturer's suggested life expectancy to gauge the remaining service life. Catalyst replacement will occur when the facility deems necessary." I think this is vague and leads me to question: What is the manufacturer's suggested life expectancy? How does the facility deem catalyst replacement necessary? I think rewriting permit condition 4.1.6 as mentioned above will provide clarification.

**DAQ Response Number 2:**

DAQ agrees with EPA and has added as noted above to address this concern.

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### **3. EPA's comment Number 3**

**Periodic Monitoring:** Condition 3.3.1 contains general provisions for stack testing. However, I suggest that the source conduct once a permit term stack testing to ensure compliance with their CO and NO<sub>x</sub> emission limits listed in conditions 4.1.2, 4.1.3, and 4.1.16. Again, I would suggest that the stack test be completed within 18 months of the expiration of the Title V permit, so the data can be used for the next permit renewal.

#### **Discussion on EPA's comment Number 3:**

Big Sandy Peaker currently utilizes the methodology in 40 C.F.R. Part 75 Appendix E for monitoring NO<sub>x</sub> emissions (see Section 4.1.13.e.). Appendix E requires periodic NO<sub>x</sub> emissions stack testing at least once every 20 calendar quarters (*i.e.* 5 years) to determine unit-specific correlation curves of NO<sub>x</sub> emission rate versus heat input rate. Alternatively, a facility could choose not to perform the testing, but would have to use much higher default NO<sub>x</sub> emission factors (lb/MMBtu). The Big Sandy Peaker Plant has historically conducted the periodic testing to be able to use actual value in lieu of the default values. This facility does not incorporate CEMS.

Testing for NO<sub>x</sub> and CO emissions are unwarranted for the black start emergency generator because the unit rarely operates as well as the unit is permitted to operate for only 270 hours per year. The emergency generator only periodically operates and for very short durations to keep it "run-ready". There are no test methods mentioned in the NSPS, 40 C.F.R. Part 60 Subpart IIII, for NO<sub>x</sub> and CO emissions.

#### **DAQ Response Number 3:**

Section 4.3.4 is a new monitoring requirement that was added in response to EPA comment #3:

The permittee shall stack test three of the combustion turbines to determine NO<sub>x</sub> and CO emissions. The results of the testing shall be used to demonstrate compliance with the NO<sub>x</sub> and CO emissions limits set forth in Sections 4.1.2 and 4.1.3. The permittee shall alternate stack testing a different set of three combustion turbines per permit term. Stack testing shall be completed within 18 months of the expiration of the Title V permit.

**[45CSR§30-5.1.c., GS-01, GS-02, GS-03, GS-04, GS-05, GS-06]**

### **CAIR – Clean Air Interstate Rule**

#### **Permit**

Although no comments were received that warranted changes to the permit or fact sheet, a court decision remanding CAIR without vacatur to EPA led to the inclusion of the provisions of 45CSR39, 45CSR40, and 45CSR41 to the permit Section 3.1. See the discussion under "Determinations and Justifications" above.

#### **Fact Sheet**

The following was added to the CAIR paragraph.

At the time this permit entered the "Draft/Proposed Comment" period, the Clean Air Interstate Rule (CAIR) was waiting for a court mandate to the vacatur or an EPA appeal to the vacatur, as discussed in the above paragraph. Since the vacatur of July 11, 2008 was never mandated, CAIR essentially remained in effect. On December 23, 2008 the U.S. Court of Appeals for the D.C. Circuit remanded CAIR to EPA without vacatur of CAIR "so that EPA may remedy CAIR's flaws in accordance with" the court's July 2008 opinion vacating CAIR. In light of this latest development regarding CAIR, The provisions of 45CSR39, 45CSR40, and 45CSR41 have been added to the Section 3.1 requirements of the permit and the CAIR Permit Application has been added to the Appendix.

### **40 C.F.R. Part 60 Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines**

Since the nitrogen oxide (NO<sub>x</sub>) emissions in Section 4.1.17 are more stringent than Section 4.1.16, the following was added to Section 4.1.16.

“Compliance for Nitrogen Oxides (NO<sub>x</sub>) emissions will be shown by the more stringent requirement in Section 4.1.17.”

Sections 4.1.17, 4.1.18, 4.1.19, 4.1.20, and 4.4.4 were added because of requirements from 40 C.F.R. Part 60 Subpart IIII. These sections cover:

1. Pounds per hour limits on Carbon Monoxide (CO), Nitrogen Oxides (NO<sub>x</sub>), Particulate Matter (PM), and HC,
2. Provides operating limits during maintenance checks and readiness checks,
3. Diesel fuel requirements, and
4. Certain recordkeeping requirements.